

REMARKS

Summary of Amendments

Claims 1, 15 and 16 have been amended. The initial amendment to claim 1 adds a limitation to the recitation of the metal plate, and the subsequent amendment to claim 1, as well as the amendments to claims 15 and 16, clarify that the functional feature set forth therein is a direct consequence of the special structural and property limitations recited in those claims.

Less canceled claims 5, 7 and 12, the pending claims are: **claims 1-4, 6, 8-11 and 13-16.**

Claim Rejections – 35 U.S.C. § 103

Claims 1-4, 6, 8-10, 13 and 14; Kuibira et al. '911 in view of Kadomura et al. '913, and Kanno et al. '439 or Takuma et al. (JP) '465

Claims 1-4, 6, 8-10, 13 and 14 stand rejected as being unpatentable over U.S. Pat. App. Pub. No. 2002/0007911 to Kuibira et al. in view of U.S. Pat. No. 5,981,913 to Kadomura et al., and U.S. Pat. App. Pub. No. 2003/0168439 to Kanno et al. or Japanese Unexamined Pat. App. Pub. No. H09-249465 to Takuma et al.

Kuibira et al. discloses:

- (a) a wafer holder **1** formed of sintered ceramic such as sintered aluminum nitride (paragraph [0071]);
- (b) a heater circuit pattern **11**, "formed with its line width and line interval of 5 mm each or less, preferably 1 mm or less" (paragraph [0075]); and
- (c) a supporter **2** onto which wafer holder **1** is "attached."

Kuibira et al., however, makes no mention whatsoever of the composition of the "support **2**," nor of the mode of attachment of the wafer holder **1** to the support **2**. Because element (c), the metal plate, is consequently not fully anticipated by *Kuibira et al.*, the Office has made the rejection under 35 U.S.C. § 103, and relies on *Kadomura et al.* for an alleged showing of the limitation on element (c) as to its composition.

Kadomura et al., however, teaches a *temperature adjusting jacket 2* ("metal jacket 2" in the language of *Kadomura et al. '913*), described as being made of a composite aluminum-based material prepared "by treatment of aluminum or an aluminum alloy with inorganic fibers of alumina, silicon carbide, potassium titanate,

aluminum borate or the like under a high pressure" (column 4, lines 7-9). The *temperature adjusting jacket* 2 supports an electrostatic chuck 3 comprises a heater 6 sandwiched between metal plates 9a and 9b.

As noted in Applicant's reply of June 8, 2007, the temperature adjusting jacket 2 of *Kadomura et al.* is for a completely different purpose from the metal plate of the present invention. It is worthy of note that *Kadomura et al.*'s optional metal plate 9b is an integral part of the electrostatic chuck (susceptor), whereas column 3, lines 52-55 state, "the metal plate serves as a heat transfer plate for transferring cool heat from a metal jacket or the like to the heater side." (Emphasis added.) And as lines 2-7 in column 6 state, "Metal or alloy having high thermal conductivity is preferably used for the metal plates 9a and 9b in order to quickly transfer the heat of the heater 6 to the dielectric member 4 or quickly transfer the cool heat from the metal jacket 2 to the heater 6."

Now, "transferring cool heat from the metal jacket" is an inverted way of saying that the metal plate 9b below the heater must operate to conduct heat into the temperature adjusting jacket 2. In that case, the metal plate 9b as an integral part of the electrostatic chuck imparts a higher thermal conductivity to the chuck (susceptor) than that of the temperature adjusting jacket 2. Hence, the opposite function in *Kadomura et al.* entails opposite property features of the components of the *Kadomura et al.* wafer stage 1.

As noted under "Summary" above, the present amendments to claims 1, 15 and 16 clarify that this completely different purpose is a direct consequence of the special structural and property limitations recited in those claims.

Namely, claim 1 has been amended to recite that the metal plate has "a thermal conductivity higher than that of said ceramic susceptor, . . . whereby the higher thermal conductivity of said metal plate than, together with said metal plate's mechanical attachment to, said susceptor promote diffusion of heat from said resistive heating element toward said retaining side.

It is respectfully submitted that the cited combination of references—*Kuibira et al.* in view of *Kadomura et al.* and *Kanno et al.* or *Takuma et al.*—does not disclose, teach, or suggest a combination as now recited in claim 1, nor in claims 15 and 16, which are narrower by turns than claim 1. Thus the pending claims rejected under this section of the Office action—claims 4, 6, 8-10, 13 and 14—should be held allowable as depending from an allowable base claim.

Claims 11, 15 and 16; Kuibira et al. '911 in view of Kadomura et al. '913, and Kanno et al. '439 or Takuma et al. (JP) ' 465, and further in view of Hiramatsu et al. '006

Claims 11, 15 and 16 were rejected as being unpatentable over *Kuibira et al.* in view of *Kadomura et al.* and *Kanno et al.* or *Takuma et al.*, as applied in making the rejection addressed above, and further in view of U.S. Pat. No. 6,507,006 to Hiramatsu et al.

Applicants respectfully submit that for the reasons set forth above, independent claim 1 should be held allowable. Inasmuch as claim 11 depends from claim 1, this claim should be held allowable as depending from an allowable base claim.

Meanwhile, claims 15 and 16 now each recite:

a metal plate made of one selected from Al-SiC, Cu-W and Cu-Mo to have a thermal conductivity greater than that of said susceptor, said metal plate fastened to said susceptor opposite said retaining side by an adhesive bonding layer, by screws screwed into said susceptor, or by a recess provided in said metal plate, into which said susceptor is snug-fit, whereby the higher thermal conductivity of said metal plate than, together with said metal plate's mechanical attachment to, said susceptor promote diffusion of heat from said resistive heating element toward said retaining side.

For at least the reasons set forth above, *Kadomura et al.* cannot be said to teach a metal-plate composition as recited in claims 15 and 16, the composition being determined by the unique purpose of the claimed metal plate.

Accordingly, Applicant courteously urges that this application is in condition for allowance. Reconsideration and withdrawal of the rejections is requested. Favorable action by the Examiner at an early date is solicited.

Respectfully submitted,

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